

Storm Data and Unusual Weather Phenomena - October 2010

Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
LAKE MICHIGAN				
PT WASHINGTON TO NORTH PT LT WI COUNTY --- 0.6 N PORT WASHINGTON [43.39, -87.87]				
	10/26/10 06:18 CST		0	Marine Thunderstorm Wind (MG 38 kt)
	10/26/10 06:18 CST		0	Source: C-MAN Station
Frequent gusts of 32 to 36kts from 615 am CST to 815 am CST, with peak wind gust of 38kts at 618 am CST.				
WIND PT LT WI TO WINTHROP HBR IL COUNTY --- 1.2 ENE KENOSHA [42.59, -87.81]				
	10/26/10 06:50 CST		0	Marine Thunderstorm Wind (MG 48 kt)
	10/26/10 06:50 CST		0	Source: C-MAN Station
SHEBOYGAN TO PT WASHINGTON WI COUNTY --- 1.4 E SHEBOYGAN [43.75, -87.69]				
	10/26/10 06:56 CST		0	Marine Thunderstorm Wind (MG 41 kt)
	10/26/10 06:56 CST		0	Source: C-MAN Station
Prevailing winds of 31 to 35 kts from 515 am CST to 715 am CST, with peak gust of 41 kts at 656 am CST.				
NORTH PT LT TO WIND PT WI COUNTY --- 3.5 SE NORTH POINT LTHOUSE [43.05, -87.88]				
	10/26/10 07:45 CST		0	Marine Thunderstorm Wind (MG 38 kt)
	10/26/10 08:15 CST		0	Source: C-MAN Station
Frequent gusts to 38kts from 745 am CST to 815 am CST.				
WIND PT LT WI TO WINTHROP HBR IL COUNTY --- 1.2 ENE KENOSHA [42.59, -87.81]				
	10/26/10 08:10 CST		0	Marine Thunderstorm Wind (MG 48 kt)
	10/26/10 08:10 CST		0	Source: C-MAN Station
Frequent gusts 35 to 40kts from 710 am CST to 815 am CST, with peak gust to 48kts at 810 am CST.				
A strong cold front associated with strengthening low pressure over Minnesota swept across the nearshore waters of Lake Michigan during the morning hours. Strong gusty winds accompanied the thunderstorms.				
WISCONSIN, Southeast				
ROCK COUNTY --- DOWNTOWN JANESVILLE [42.68, -89.02], 2.0 E JOHNSTOWN CENTER [42.70, -88.79]				
	10/26/10 05:07 CST		0	Thunderstorm Wind (EG 65 kt)
	10/26/10 05:15 CST		0	Source: Law Enforcement
County sheriff deputies reported numerous trees blown down by thunderstorm wind gusts estimated up to 65 knots (75 mph). Construction barrels were scattered along Interstate 90.				
JEFFERSON COUNTY --- HELENVILLE [43.02, -88.70]				
	10/26/10 05:30 CST		15K	Thunderstorm Wind (EG 65 kt)
	10/26/10 05:30 CST		0	Source: NWS Employee
An NWS employee reported multiple homes with roof shingle damage from thunderstorm wind gusts estimated up to 65 knots (75 mph).				
ROCK COUNTY --- 3.0 NE BELOIT [42.55, -88.99]				
	10/26/10 05:35 CST		5K	Thunderstorm Wind (EG 65 kt)
	10/26/10 05:35 CST		0	Source: Trained Spotter
A trained spotter reported sections of a partially destroyed billboard entangled in power lines at the intersection of Milwaukee Road and Freeman Parkway by thunderstorm wind gusts estimated up to 65 knots (75 mph).				
JEFFERSON COUNTY --- 3.0 W LAKE MILLS [43.08, -88.96], LAKE MILLS [43.08, -88.90]				
	10/26/10 05:40 CST		20K	Thunderstorm Wind (EG 65 kt)
	10/26/10 05:45 CST		0	Source: Law Enforcement

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Law enforcement officials reported numerous trees and power lines blown down by thunderstorm wind gusts estimated up to 65 knots (75 mph) in the city of Lake Mills.				

KENOSHA COUNTY --- KENOSHA AIRPORT [42.60, -87.93]

10/26/10 06:46 CST	0	Thunderstorm Wind (MG 59 kt)
10/26/10 06:46 CST	0	Source: ASOS

The ASOS at the Kenosha airport recorded a thunderstorm wind gust of 59 knots (68 mph) with sustained winds of 43 knots (49 mph). Trees were reported blown down in the vicinity from the thunderstorm wind gusts.

KENOSHA COUNTY --- 1.0 N SOMERS [42.66, -87.90], 1.3 N SOMERS [42.67, -87.90]

10/26/10 06:47 CST	0.10M	Tornado (EF1, L: 0.43 mi , W: 100 yd)
10/26/10 06:48 CST	0	Source: NWS Storm Survey

An EF1 tornado developed about 0.95 mile north of Somers, about 2300 feet southwest of the intersection of County Highway KR (County Line Road) and County Highway EA (72nd Avenue). The tornado moved northeast just under one-half mile in Kenosha County before crossing into southern Racine County about 1.34 miles northeast of Somers at the intersection of CTH EA and County Line Rd. While in Kenosha County it destroyed a 6-vehicle garage and damaged a nearby home, trees, and power lines. The tornado path averaged 50 yards in width, with a maximum width of 100 yards. The EF-rating was based on DI 27(TH) DOD 4 with estimated wind speeds up to 100 mph. The exact start location is Lat 42.66377 Lon -87.89961. The exact end location on the Kenosha-Racine County line is Lat 42.66901 Lon -87.89515. Property damage values were estimated.

RACINE COUNTY --- 2.2 S STURTEVANT [42.67, -87.90], 1.4 WNW DOWNTOWN RACINE [42.73, -87.83]

10/26/10 06:48 CST	1M	Tornado (EF1, L: 5.40 mi , W: 100 yd)
10/26/10 06:53 CST	2	Source: NWS Storm Survey

An EF1 tornado that developed in far northern Kenosha County, northeast of Somers, entered Racine County near the intersection of County Highway KR (County Line Road) and 90th Street. After a path length of about 0.43 mile in Kenosha County, it crossed into Racine County where CTH EA (72nd Ave) intersects County Line Rd. The tornado moved northeast and dissipating in the northeast section of Graceland Cemetery on the west side of the City of Racine, about 500 feet west of Osborne Boulevard. In Racine County, the tornado blew a weakly anchored barn (built in the 1920s) off its foundation and damaged an industrial building south of STH 11. Later on, it tore off a 100'x200' roof section of the Case/New Holland building, damaged several HVAC units on the roof, and tore off some of the building's garage doors. The Case/New Holland plant was closed until Monday, November 1st while the roof was being repaired. Two workers in this plant were injured by the tornadoes effects. Additionally, a tractor and it's semi-trailer on the Case/New Holland site were blown over and damaged. wo other businesses on STH 11 reported roof damage. At least 3 homes sustained damage. State Highway 11 was closed for a time in eastern Racine County due to debris and fallen power lines, closing or disrupting business at stores along Highway 11, especially in the 7000 and 7100 blocks. At a church 2 miles northeast of the intersection of STH 11 and Oakes Rd., damage was inflicted to its roof, siding windows and a brick sign. Numerous trees and a few power lines were blown down or broken along the path of the tornado. At one point, about 2700 customers lost electrical power. There were reports of a couple vehicle accidents as drivers tried to avoid the tornado. The tornado path averaged 50 yards in width, with a maximum width of 100 yards. The EF-rating was based on DI 23 DOD 4 EXP103 with estimated wind speeds up to 105 mph. The exact start location in Racine County is Lat 42.66901 Lon -87.89515. The exact end location is Lat 42.72845 Lon -87.82596. The path of the tornado was not a straight line, rather, a rough curved line with an actual path length of 5.92 miles within Racine County. After crossing STH 11 about 1/10 of a mile east of North Branch Pike River, the tornado path bearing changed from NNE to NE. Property damage values are estimated.

An intensifying 50 to 70 knot low-level jet ahead of an intense negatively-tilted upper level trough over the Plains transported low-level moisture and instability into southern Wisconsin during the early morning hours of October 26th. Overall forcing for ascent increased as a vorticity maximum rounded the base of the upper trough and lifted northeast across western Wisconsin. Severe thunderstorms developed ahead of a surface cold/occluded front that trailed from record surface low pressure over northern Minnesota. Strong shear profiles were supportive of rotating updrafts which produced damaging wind gusts and an EF1 tornado that moved from extreme northern Kenosha County into eastern Racine County. For additional related information go to this URL:
http://www.crh.noaa.gov/mkx/?n=102610_recordcyclone.

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Path of October 26, 2010 Racine County EF-1 tornado.

(WI-Z046) MARQUETTE, (WI-Z047) GREEN LAKE, (WI-Z051) FOND DU LAC, (WI-Z052) SHEBOYGAN, (WI-Z056) SAUK, (WI-Z057) COLUMBIA, (WI-Z058) DODGE, (WI-Z059) WASHINGTON, (WI-Z060) OZAUKEE, (WI-Z062) IOWA, (WI-Z063) DANE, (WI-Z064) JEFFERSON, (WI-Z065) WAUKESHA, (WI-Z066) MILWAUKEE, (WI-Z067) LAFAYETTE, (WI-Z068) GREEN, (WI-Z069) ROCK, (WI-Z070) WALWORTH, (WI-Z071) RACINE, (WI-Z072) KENOSHA	10/26/10 06:00 CST	1.02M	High Wind (MAX 55 kt)
	10/27/10 18:00 CST	1	0

Long-duration, widespread, southwesterly high winds raked south-central and southeast Wisconsin for about 36 hours, resulting numerous reports of felled trees, broken tree branches, downed power-lines, and damage to structures and vehicles. All of this was generated by a record-breaking, low pressure system which tracked northeast from the Central Plains on Monday, October 25, and then rapidly deepened as it moved northeast across northern Minnesota on Tuesday, October 26. The surface low was being driven by a strong negatively-tilted 500 mb trough moving through the central U.S. A surface weather map at 600 PM October 26th is attached to the Dane County event. For additional on-line information go to this URL: http://www.crh.noaa.gov/mkx/?n=102610_recordcyclone.

This abnormally strong extra-tropical system broke the record for the lowest sea level pressures measured in the states of Wisconsin and Minnesota. The lowest pressure in Wisconsin occurred at Superior, in far northwest Wisconsin, measuring 961.3 millibars (28.39") at 11:15 AM CDT on the 26th. The previous lowest sea level pressure recorded in Wisconsin was 963.4 millibars (28.45") at Green Bay on April 3 of 1982. Madison had the second lowest sea level pressure reading on record at 975.3 millibars (28.80 inches of mercury), and Milwaukee had the seventh lowest reading on record at 978.7 millibars (28.90 inches of mercury).

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Severe thunderstorms formed along and ahead of a cold front surging eastward ahead of the low. An EF1 tornado formed in northern Kenosha County and tracked northeast across portions of central and eastern Racine County. There were also numerous reports of wind damage from severe thunderstorm winds. All of this severe weather activity is documented in tornado and thunderstorm wind events for October 26th. After the cold front passage, strong subsidence in the "dry slot" of the system produced gradient winds of 22 to 38 knots (25 to 45 mph), with measured gusts to 55 knots (63 mph). Based on severity of resultant damage, isolated maximum wind gusts may have been as high as 61-64 knots (70-75 mph), especially on ridge tops.

The slow-moving low kept the tight pressure gradient draped across south-central and southeast Wisconsin Wednesday, October 27th. Wind speeds slowed for a time Tuesday night as nocturnal cooling prevented mixing up to the strong winds within 3,000 feet of the ground. However, mixing after sunrise on the 27th tapped these stronger winds, with average mixed-layer winds around 50 knots. Winds at many locations were stronger on Wednesday than Tuesday; with sustained speeds of 26 to 39 knots (30 to 45 mph), and estimated gusts to 56 knots (65 mph). Rural Mutual Insurance reported claims from agricultural producers of one million dollars in damage to buildings and equipment from across all of Wisconsin. We Energies reported 20,000 customers in Southeast Wisconsin were without power at the peak of the power outages on Tuesday, October 26th.

Below is a county-by-county breakdown (all damage losses are estimated based on variety of sources):

Marquette Co. - Wind gusts blew down trees and power lines across the county.

Green Lake Co. - Wind gusts blew down trees and power lines across the county. A trained spotter in Berlin measured a 62 mph (54 knot) wind gust at 115 pm CDT on October 27th.

Fond du Lac Co. - Wind gusts blew down trees and power lines across the county. A mesonet site in Bryon measured a 60 mph (52 knot) wind gust at 4 pm CDT on October 27th. The maximum 2-minute wind speeds at the Fond du Lac Airport (KFLD) were 38 and 36 mph on the 26th and 27th, respectively.

Sheboygan Co. - Wind gusts blew down trees and power lines across the county. The Sheboygan C-MAN site in the Sheboygan harbor entrance measured a 62 mph (54 knot) wind gust at 1 pm CDT on October 26th. A mesonet site one mile north of downtown Sheboygan measured a 62 mph (54 knot) wind gust at 430 pm CDT on October 27th. The maximum 2-minute wind speeds at the Sheboygan County Airport (KSBM) were 44 and 46 mph on the 26th and 27th, respectively.

Sauk Co. - Wind gusts blew down trees and power lines across the county. A mesonet site in Baraboo measured a 60 mph (52 knot) wind gust at 1130 am CDT on October 27th. The maximum 2-minute wind speeds at the Lone Rock Airport (KLNR) were 35 and 38 mph on the 26th and 27th, respectively. Just east of Reedsburg, the metal roof of a church storage shed was ripped off. One of shed's support beams crashed through the roof of a the main church building.

Columbia Co. - Wind gusts blew down trees and power lines across the county. A mesonet site in Lodi measured a 59 mph (51 knot) wind gust at 330 pm CDT on October 27th and 50 knots (58 mph) on the 26th. Portage police responded to five wind-related calls, including two downed utility poles and a report of a fallen tree damaging two vehicles.

Dodge Co. - Wind gusts blew down trees and power lines across the county. The RAWWS site at Horicon Marsh measured a 53 mph wind gust at a 20-foot height with conversion to the 33-foot standard would bring it to an estimated 61 mph (51 knots) at 101 pm CDT on October 27th. A 53 knot (61 mph) wind gust was measured at a location 5 miles west of Knowles on the 27th. The Dodge County emergency manager reported parts of roofs torn off a couple of pole barns east of Beaver Dam, as well as trees down and shingles blown away.

Washington Co. - Wind gusts blew down trees and power lines across the county. A mesonet site in Bear Valley measured a 62 mph (54 knot) wind gust at 430 pm CDT on October 27th.

Ozaukee Co. - Wind gusts blew down trees and power lines across the county due to wind gusts estimated at 58 mph (50 knots). A large maple tree fell on a portion of a home in Grafton on Wednesday, October 27th, destroying an awning over the front door of the home and damaging roof shingles on the home.

Iowa Co. - Wind gusts blew down trees and power lines across the county due to wind gusts estimated at 58 mph (50 knots). U.S. Highway 18-151 north of Dodgeville was closed from 7 am to 330 pm CDT on Tuesday, October 26th due to downed power lines at the intersection with State Highway 23. Also on the 26th, a large tree fell on a home on West Chapel Street in Dodgeville, severely damaging the roof.

Dane Co. - Wind gusts blew down trees and power lines across the county. A Department of Transportation highway sensor on STH 12 in Madison measured a 62 mph (54 knot) wind gust at 4 pm on October 26th. The wind sensor on top of the 15-story University of Wisconsin Atmospheric, Oceanic and Space Sciences Building in Madison measured a wind gust of 72 mph (63 knots) at 150 pm CDT on October 27th. A semi-trailer truck was rolled over by the winds, blocking the westbound lanes of U.S. Highway 151 in Sun Prairie on the 26th. A section of the rubber roof on top of the Westgate Mall was peeled back by the strong winds. A tree fell onto a house on Lakeland Ave. on the east side of Madison, and a tree limb damaged the roof of a house on Regent Street on the west side. A large burr

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oak toppled in the strong winds damaged a barn on the grounds of the Sterling North museum in Edgerton on the 27th. Even in a sheltered, residential area 5 miles southwest of Downtown Madison, an observer measured wind gusts to 44 knots (51 mph) at 554 pm CDT on the 27th! At this same location, 1.11" of rain fell on the 26th and a total of 1.54" on Oct 23-24th. It is possible that the wet surface soils were softened by the rains, making it easier for the high winds to knock down trees. The maximum 2-minute wind speeds at the Dane County Regional Airport (KMSN) were 30 and 28 mph on the 26th and 27th, respectively.

Jefferson Co. - Wind gusts blew down trees and power lines across the county from wind gusts estimated at 58 mph (50 knots).

Waukesha Co. - Wind gusts blew down trees and power lines across the county from wind gusts estimated up to 60 mph (52 knots). We Energies reported about 1700 customers without power, mainly in the Oconomowoc and Nashota areas at 9 am CDT on October 26th. A large window was blown out at a sporting goods store in Pewaukee. The county mental health center, the Huber Facility, the county communications center and the county highway shop went to emergency back-up power due to the power outages. The high winds snapped a flag pole at its base at the Hawks Inn Historical Museum in Delafield. In the city of Waukesha a toppled tree damaged a home. At the Waukesha Airport (Crites Field) the high winds destroyed part of a roof of a hangar and damaged a door of an adjacent hanger.

Milwaukee Co. - Wind gusts blew down trees and power lines across the county. A mesonet site in Brown Deer measured wind gust of 63 mph (54 knots) at 430 pm on October 27th. The maximum 2-minute wind speeds at the Milwaukee Airport (KMKE) were 44 and 43 mph on the 26th and 27th, respectively. The strong gusts peeled off exterior wall bricks on two buildings north of downtown Milwaukee along the Milwaukee River. The City of Milwaukee Department of Public Works received 45 calls about broken tree branches, a half dozen reports of minor damage and traffic signals out at a dozen intersections.

Lafayette Co. - Wind gusts blew down trees and power lines across the county from wind gusts estimated up to 58 mph (50 knots).

Green Co. -Wind gusts blew down trees and power lines across the county. A mesonet site in New Glarus measured a wind gust of 62 mph (54 knots) at 340 pm CDT on the 27th.

Rock Co. - Wind gusts, estimated up to 58 mph (50 knots) blew down trees and power lines across the county. A man in Janesville was injured when he was struck by a wind-blown object, possibly a garbage can lid. He was knocked into his outdoor grill, and received hospital treatment. School was canceled and students sent home from Janesville Parker High School when portion of the roof was peeled back by the strong winds (estimated repair of \$215,000). A garage roof was damaged in Janesville by a large oak limb punching a hole in the roof, and a power pole and power line were downed by the winds near the intersection of Center Ave. and Joliet St. southwest of downtown Janesville. A massive burr oak tree in Edgerton was blown over and smashed part of roof of a barn on the grounds of the Sterling North museum.

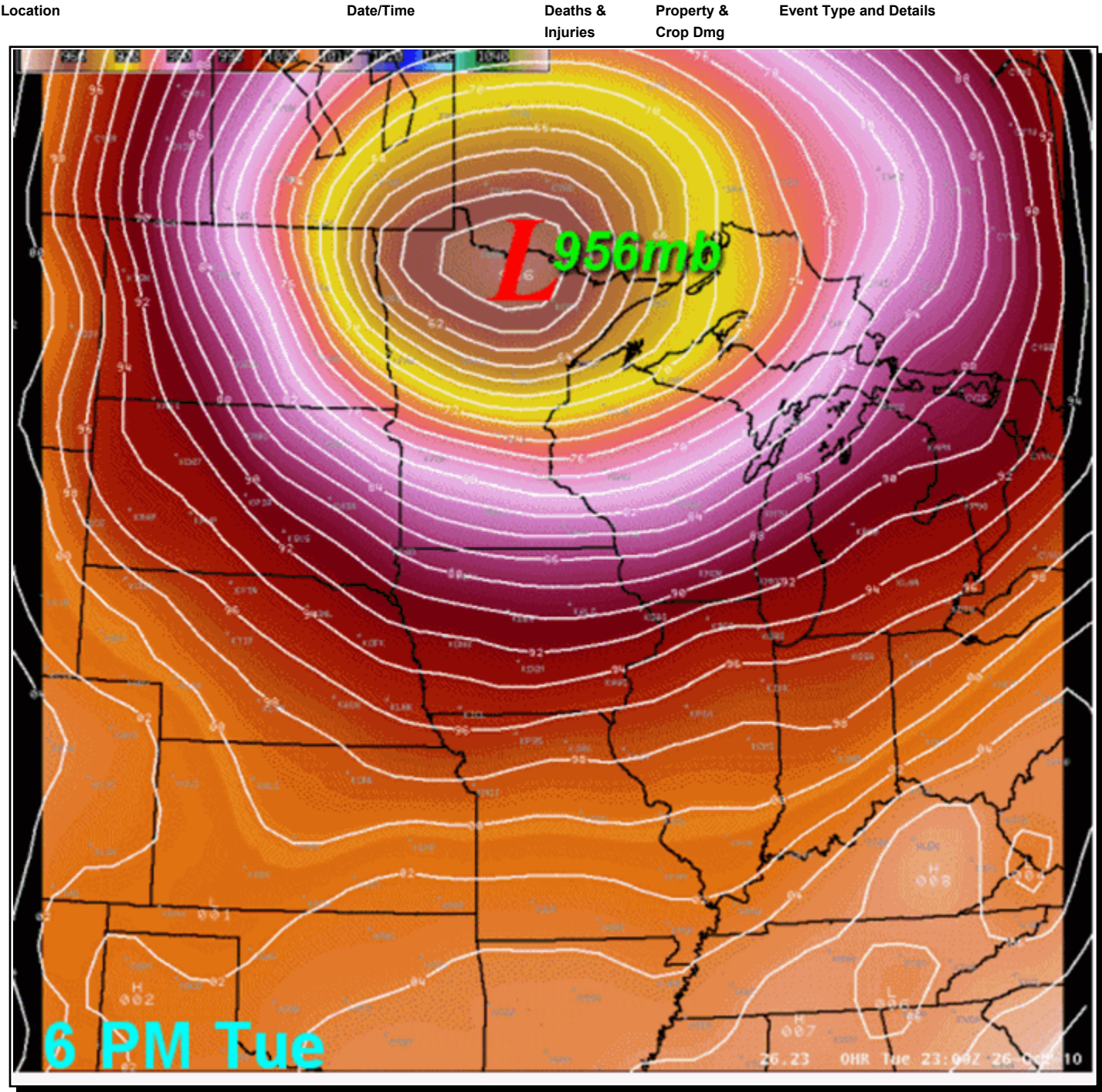
Walworth Co. - Wind gusts blew down trees and power lines across the county. A mesonet site in Elkhorn recorded a 59 mph (51 knot) wind gust at 3 pm CDT on October 27th. Wind-driven rain leaked through the large windows of the atrium at East Troy High School.

Racine Co. - Wind gusts blew down trees and power lines across the county. A mesonet site in the city of Racine reported a 63 mph (55 knot) wind gust at 3 pm CDT on October 27th. The maximum 2-minute wind speeds at the Racine Airport (KRAC) were 36 and 37 mph on the 26th and 27th, respectively. About 4,000 customers in the county were without power. In the city of Racine, embers blown out of a portable fire pit ignited a nearby shed and a neighboring garage on Glendale Ave. Both the garage and the shed were destroyed. Gilmore Middle School and Wadewitz Elementary School dismissed students for the day around 11 am on Tuesday, October 26th because of power outages at both schools.

Kenosha Co. - Wind gusts blew down trees and power lines across the county, including some road signs. The ASOS at Kenosha County Airport reported a 58 mph (50 knot) wind gust at 344 pm CDT on October 27th. The maximum 2-minute wind speeds at the Kenosha County Airport (KENW) were 49 and 46 mph on the 26th and 27th, respectively. About 1,700 customers lost power when strong winds snapped four utility poles and downed power lines along County Highway KR in Somers. A garage was leveled by the strong winds in the 200 block of 72nd Avenue in Kenosha.

Lake Michigan waters - a buoy in the nearshore waters of Lake Michigan just east of the city of Racine recorded a 12-foot wave on the 26th and 9-foot wave on the 27th. A buoy east of Washington Island (Door Co.) in the middle of Lake Michigan recorded a 21.7 foot wave on the 26th.

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Surface isobaric map of Midwest at 1700 CST (600 PM CDT) October 26, 2010. Note the tight isobaric gradient which generates widespread, strong to high winds. Red "L" denotes position of central low pressure.